RESTORATION FOLLOWING PURPLE LOOSESTRIFE REMOVAL

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OVERVIEW

Theories on Plant Community Development

Site Characteristics

Potential Plant Materials

PLANT COMMUNITY DEVELOPMENT

1. SELF-RESTORATION/
SELF-DESIGN DESIGN

2. ACTIVE-RESTORATION/
DESIGNER-DESIGN

SELF-DESIGN

Based in the Clementsian theory of climax communities and equilibrial succession.

SELF-DESIGN

The practitioner following Clementsian successional theory asserts that the ultimate plant community will be determined by climate and abiotic factors.

SELF-DESIGN

A practitioner of the Clementsian school asserts that with a clean pallet minimal intervention is necessary for development of a functional plant community.

DESIGNER

Based on Gleasonian's theory of succession.

DESIGNER

- Emphases on species life history strategies
- Recognizes that the order of species arriving at a site can alter the successional trajectory.

DESIGNER

The practitioner following the dictates of Gleasonian successional theory asserts that active management can alter the characteristics of the realized plant community.

RESTORATION GOALS

- Self-design approach is often associated with restoration concerned with ecosystem processes such as biomass production and removal of sediment, nitrogen and phosphorus from the water.
- The designer approach is often associated with restoration concerned with biodiversity

SITE CONDITIONS

Wetland Types Impacted by Purple Loosestrife

- Marshes
- Sedgemeadows
- Fens
- Bogs
- Pannes
- Wet Prairies

LANDSCAPE CHARACTERISTICS

- Connectivity to other wetlands
- Quality of adjacent wetlands
- Use of adjacent uplands
- Buffer zones

ABIOTIC CHARACTERISTICS

- Water Chemistry
- Soil types
- Soil Chemistry
- Hydroperiod

BIOTIC FEATURES

- Potential wildlife function (Birds, Fish, etc.).
- Potential herbivory.
- Quality of other vegetation if present.
- Quality of the seedbank.

SEEDBANK SPECIES

- Sedge Meadow
- Blue Vervain
- Cattail
- Reed Canary Grass
- Witch Grass
- Dudley's Rush
- Fowl Meadow Grass
- Soft-Stem

- GM (derby ditch)
- False Nettle
- Joe Pye Weed
- Boneset
- Marsh Purslane
- Cattail
- False Nettle
- Juncus spp
- Yellow Rocket

SEEDBANK SPECIES

- Cowles Bog
- Wool Grass
- Cattail
- Juncus spp.
- Blue vervain
- Marsh Purslane
- Skullcap
- Smartweed
- Clear weed

- Matrix Species were not present
- In all cases other potential invasive species such as Cattail, Reed Canary Grass, Common Reed, were present

PLANT MATERIALS

LIFE STAGES

- Seeds
- Vegetative propagules (rhizomes, bulbs etc.
- Potted plants.

SPECIES FROM SEED

- Many forbs- Joe pye weed, Marsh milk weed, goldenrods, Asters,
- Species of the genus Juncus.
- Some grass species such as Fowl manna grass

- Some Carex spp.
 Especially those that occur at wetland-upland ecotone (fox sedge, crested oval sedge)
- Duck Potato
- Soft stem bulrush.

SPECIES FROM VEGETATIVE PROPAGULES

- Duck Potato
- Hard Stem Bulrush
- Blue Flag
- Common Burreed

POTTED SPECIES

Many Sedges- Tussock sedge, Lake sedge

PLANT INSTALLATION

SHOTGUN PLANTING

Plant materials are collectively dispersed in target zones.

Nature will sieve the propagules selecting those species most appropriate for a given site.

CUSTOM PLANTING

A skilled restorationist will evaluate the available micro-habitats and then select a subset of species that are best suited for those micro-habitats.

Cost effective

NATIVE PLANTS TO REPLACE PURPLE LOOSESTRIFE



Verbena hastata(Blue Vervain)

Pontederia cordata(Pickerel Weed)

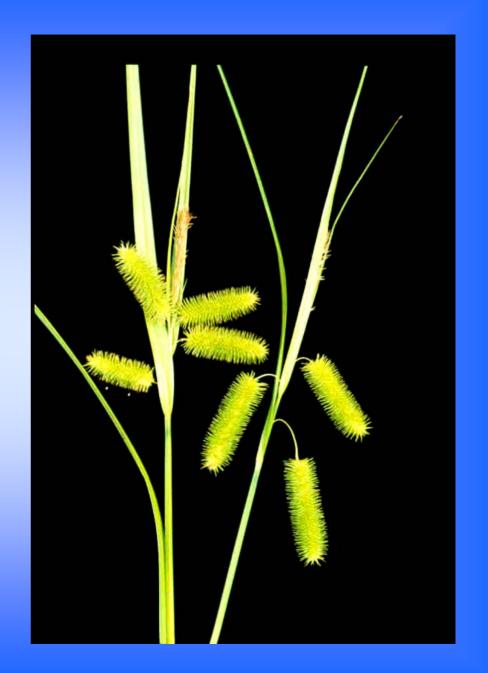


Lobelia cardinalis(Cardinal Flower)



Carex spp.

Many sedge species





Mimulus spp.

Monkey-flower